

Appl. No. 10/017,333
Amdt. dated February 24, 2004
Reply to Office action of October 24, 2003

REMARKS

Summarizing the status of the claims pursuant to this Amendment B, claims 1 - 29 are pending in the application; claims 18 and 19 are withdrawn from consideration; claims 1 - 15 are allowed pursuant to the Office action of October 24, 2003, claims 16, 20 and 21 are currently amended; claims 22 and 23 are cancelled; claim 24 is amended to incorporate the limitations of claims 22 and 23; claims 25, 26 and 28 are amended to depend from and further define claim 24; and claim 29 is newly added. Accordingly, Applicant submits that claims 1-17 and claims 24-29 are directed to patentable subject matter, and are believed to be in condition for allowance. Reconsideration of the application, withdrawal of the Rejections, and issuance of a Notice of Allowability with respect to claims 1-17, and 24-29 are respectfully requested.

With respect to claim 24, Examiner objected to claim 24 as being dependent upon a rejected base claim, and stated it would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims. Accordingly, Applicant has incorporated the limitations of claims 22 and 23 into amended claim 24, and claim 24 is now believed to be in condition for allowance. Claims 25 - 28 are amended to depend from and further define claim 24 either directly or through intervening claims, and are believed to now be in condition for allowance as depending from allowable claim 24 as well as for the reasons set forth below.

The Examiner has rejected claims 16, 17, 20 and 21 under 35 USC §112, first paragraph, as failing to comply with the written description requirement. Applicant has

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amended claim 16 to state that the kit includes a replacement reversible condenser fan motor for driving the fan blade in a forward direction and a reverse direction. Applicant believes this amendment clarifies the operation of the fan motor and fan blade and complies with the requirements of 35 USC §112, first paragraph. Claims 17, 20 and 21 depend from and further define amended claim 16, and are believed to now satisfy the requirements of 35 USC §112, first paragraph, for the reasons set forth with respect to claim 16. Accordingly, Applicant requests withdrawal of this ground of rejection for claims 16, 17, 20 and 21.

With respect to claim 16, the Examiner "maintains it would have been obvious to have offered a bag of parts necessary to effect conversion of the prior art True refrigerator to have a reverse air condenser cleaning system as taught by JP'366." Applicant submits that claim 16, as currently amended, is not taught or suggested by JP'366 alone or in combination with the prior art True refrigerator. Claim 16 requires that control means causes the replacement fan motor to drive the fan in the forward direction for a first time period or the reverse direction for a second time period during the refrigeration cooling cycle when power is supplied to the compressor. The first and second time periods are delayed when power is not supplied to the compressor and resumed when power is supplied to the compressor. Such limitations are similar to those set forth in allowed claim 1 wherein the first and second periods of time are tolled or delayed when power is not supplied to the cleaning system. With Applicant's system, the cleaning cycle is directly related to compressor utilization, rather than fixed time intervals, and considerable power utilization savings accrue. In contrast, the cooling fan of JP'366 operates in

reverse rotation for a set amount of time each time the accumulated rotational time in the forward direction reaches a specified time value. In other words, the fan of JP'366 operates in reverse for a set real time interval, regardless of compressor operation (see Diagram 8). This differs from the kit as set forth in amended claim 16, wherein the fan does not operation in the reverse mode for a fixed real time interval, but instead operates only when the compressor is energized and for a time period based upon the duration of compressor running time. Accordingly, JP'366 fails to teach the condenser cleaning system kit as required in claim 16.

Moreover, Applicant acknowledges that various "kits of parts" exist to retrofit existing refrigeration systems, such as the R-12/R-13.4A retrofit kits cited by the Examiner. The mere existence of various kits does not establish sufficient grounds for rejecting the condenser cleaning system kit as set forth in claim 16. For example, the R-12/R-13.4 retrofit kits do not provide for an improved cleaning system as required in claim 16. Moreover, the retrofit kit of the present invention does not require complex installation procedures, as required in prior art systems. To the contrary, the kit of the present invention can be installed in an existing unit and still maintain UL approval since the installer does not cut any wires or disturb any of the OEM work that was done at the factory when the kit is installed in the field. In contrast, purchasing a service part from a wholesaler and wiring it into a cooler or using a kit to change the refrigerant from R-12 to R-134a makes the UL approval on the original OEM equipment void. Thus, claim 16 is believed to be allowable over prior art kits such as R-12/R-134A retrofit kits for these reasons as well.

Claims 17, 20 and 21 depend from and further define claim 16, and are believed to be allowable for the reasons set forth with respect to claim 16. More specifically, Claim 17 further requires that the reversible motor is a solid state commutated motor. Such limitations are similar to those set forth in allowed claim 9. A SSC motor allows for speed changes between the forward and reverse directions. In contrast, JP'366 employs a fixed speed induction motor (e.g., RPSC induction motor) in which speed change between the forward and reverse directions is not possible. Accordingly, the invention as set forth in Claim 17 is not taught or suggested by JP'366, and is believed to be allowable for this reason as well as those set forth above with respect to claim 16.

Claim 20 is amended to further define the operation of the timer by requiring that the timer causes the replacement fan motor to drive the fan in the forward or reverse direction based upon the duration of compressor running time. These limitations are similar to those set forth in allowed claim 7. As set forth above, the claimed invention is not taught or suggested by JP'366, and is believed to be in condition for allowance.

Claim 21 depends from and further defines claim 17, and requires the first selected speed is less than the second selected speed. These limitations are similar to those set forth in allowed claim 10. JP'366 does not teach or suggest providing a first speed for the forward direction that is less than the second speed of the reverse direction. JP'366 employs a fixed speed induction motor in which speed changes between the forward and reverse directions are not possible. Accordingly, claim 21 is believed to be in condition for allowance.

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The Examiner further rejected claims 16, 20 and 25 under 35 USC §103(a) as being unpatentable over JP'366 in view of Brown et al (3,022,639) or the Mallory M179 prior art defrost timer disclosed on page 11, lines 5-9. The thermostatic controller of Brown et al. initiates a defrost interval in response to time and terminates a defrost interval in response to temperature. The Examiner states "To have used a conventional electromechanical timer which are ubiquitous in this field to monitor compressor run time instead of a microcomputer such as disclosed by JP'366 to reduce cost and increase tolerance to surge currents on the line would have been obvious." Applicant respectfully disputes Examiner's assertion with respect to claims 16, 20 and 25. No teachings or suggestions in JP'366, Brown et al. or the Mallory M179 have been cited that support the modifications taught by the present invention in claims 16, 20 or 25, as amended. Absent such teachings in the prior art, it is not appropriate to apply hindsight analysis to suggest such improvements are now obvious in view of Applicant's invention. In fact, it appears that the Examiner has impermissibly used the Applicant's own teachings with respect to the Mallory timer in the present invention in a hindsight analysis as the basis for asserting the present inventions set forth in these claims would have been obvious to one of ordinary skill in the art at the time the invention was made. Moreover, such a proposed combination still fails to teach or disclose the kit of claims 16 and 20 for the reasons set forth above, and the system of claim 25. Note that claim 25 is amended to depend from and further define allowable claim 24, and is believed to be allowable therewith as well as for the foregoing reasons. Accordingly, Applicant believes that claims 16 and 20 are allowable for

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these reasons as well as those set forth above, and that claim 25 is allowable for these reasons as well as those set forth herein with respect to claim 24, from which claim 25 depends.

Claims 17, 21 and 26 are rejected under 35 USC §103(a) as being unpatentable over the prior art as applied to claim 16 and 22, and further in view of Uemura or Harms et al. Uemura and Harms et al. disclose solid state commutated motors. Applicant believes the Examiner's reference to Uemura and Harms is misplaced and not relevant to the claimed invention. The Examiner states "both Uemura and Harms teach SSC motors which would have been obvious to have been used in the JP'366 system to avoid the periodic necessity to change brushes in a commutated type motor." However, SSC motor technology is not driven by reliability problems associated with commutator/brush current conduction, as suggested by the Examiner. Instead, SSC motors are required in amended claims 17 and 26 because such motors provide precise speed and torque control under differing load conditions of the present invention. There is no basis in the art cited by the Examiner for combining or modifying JP'366 to include the SSC motor of the present invention. No cooling system reference teaches or discloses any advantage to operating the cooling fan in the reverse mode at a higher speed than in the forward mode. Absent such a showing in the prior art, the examiner has impermissibly used the applicant's teaching to hunt through the prior art for the claimed elements and combine them as claimed. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed.

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Cir. 1991); In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed.Cir. 1990). Accordingly, Applicant believes claims 17, 21 and 26 are patentable over Uemura and Harms.

Claim 27 is rejected under 35 USC §103(a) as being unpatentable over the prior art as applied to claim 26, and further in view of Van Gils or JP 11-201691. As discussed above, claim 27 is amended to depend from and further define allowable claim 24 through amended claim 26, and is believed to be allowable therewith. Examiner states Van Gils and JP'691 teach a higher motor speed during reverse operation to aid in cleaning and that "to have used a higher motor speed in reverse operation in JP'366 to advantageously improve cleaning would have been obvious in view of either teaching." However, Van Gils and JP'691 do not teach or disclose control means for changing the speed of the rotor in forward and reverse, as required in amended claim 27. To the contrary, the circuit diagram in the Van Gils patent sets forth a polarity commutating motor such as a fixed speed RPSC induction motor. No speed control circuitry is taught or disclosed. Accordingly, Applicant submits that Van Gils and JP'691 fail to teach cleaning system as provided in claim 27. Thus, claim 27 is believed to be allowable for these reasons as well as those set forth above with respect to allowable claim 24, from which amended claim 27 depends.

Newly added claim 29 is similar to allowed claim 1 and amended claim 16, and is believed to be allowable over the prior art for the reasons set forth with respect to claims 1 and 16.

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In view of the foregoing, Applicant believes claims 1-17 and 24-29 are in condition for allowance. Issuance of a Notice of Allowability is respectfully requested.

Respectfully submitted,



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